

Syllabus

Astronomy 104 Laboratory

Section 8 – Honors, Spring 2024

The laboratory is a mandatory part of Astronomy 103/104, and it is to provide practical experience with astronomical observations, measurements in general, and with the underlying scientific concepts. Half of the labs are indoors, so they are kept rain or shine.

Time and Place of Laboratory

Kennon Observatory, Tuesday at 9:00 – 10:50 PM

Lab Instructors:

Sheikh Nauman Ibrahim Ahmed, sibrahim@go.olemiss.edu

(Several other instructors will help out with the imaging project.)

Lab manual and other materials:

No electronic devices (neither the students' own computers nor cell phones) may be used during labs. Calculators and lab manuals will be provided.

Honors Disclosure:

Honors students are expected to live up to the name of the Barksdale Honors College. Over the semester, appointments will be made with small groups for observations. Honors students are expected to be flexible, sign up at the earliest available dates, and keep their promises. It will sometimes be inconvenient to make arrangements to make yourselves free at an unusual time. If you cannot live with that, this class is not for you.

Procrastination or broken promises, unfortunately, do sometimes occur. Be aware that it will severely hurt the affected students' grades.

General information:

Field trip(s): Two field trips will be conducted to the Darks Site during lab time. The Dark Site is located 10 miles out of town. Transportation is provided. Students must be dressed properly. (Please note that in winter it may get very cold at night and there are no facilities at the Dark Site, it is outside!) Anyone who has a medical or similar problem (e.g. allergies) must notify the instructor ahead of time so that arrangements can be made.

Honors content: Because the lecture part is the same as the class for all the other sections, and there is no homework for lecture, all the extra work pertaining to an honors class will be made part of the lab only. Honors students will be expected to do a small amount of homework, assigned in lab, plus do a semester project, which is done outside regular lab time.

Discussion: in the beginning of each lab, students are supposed to ask previously prepared questions pertaining to lecture material, then participate in the discussion of these questions. Credit is assigned for asking and for participating; this credit is added to the test grades.

Participation is required in each lab, unexcused missed labs count as zero. In addition, a few rather important labs must be made up if missed (*even with an acceptable excuse!*). Failure to make up each of these particular labs *immediately* will result in an additional zero grade.

Pre-labs: Changes in lab times will happen a few times in the semester. In addition, a few labs may require advance preparation. These pre-labs will be due in the beginning of the lab. They will be announced a week in advance. Pay attention to these announcements, and check for possible changes in case you have missed a lab!

Semester project:

The project will involve (i) learning the constellations and the use of astronomical telescopes, (ii) taking a detailed CCD image of a deep-sky object, (iii) processing the image, resulting in a “pretty picture”, (iv) analyzing the image, explaining everything that it contains, (v) presenting the picture and the findings in a short paper.

The semester project will require studies and work done outside class. Because homework is not assigned either in class, the total workload in the semester project will correspond to the regular workload in a science course.

Special care should be taken due to the unreliability of weather in Mississippi. It is imperative that each student uses the first available clear night in the semester for their two observations, even if it is at an inconvenient time. The consequences of missed clear nights are very detrimental for both the quality of work and for grades.

Because observational sessions require a significant effort and time from the instructor, last minute cancellations will not be generally possible. Mark your assigned telescope time in your calendar, and make sure you do not create a conflict with it!

The finished reports are in general due in 14 days after all raw images have been taken.

The measure of success depends in part on factors outside the students’ control. The grades on the semester project will be based on a combination of actual success, the effort exerted by the student, the student’s preparation for the observational sessions. (In order to use all available telescope time, the instructor will give extensive help even if a student is **not well prepared**, but any such occurrence **will work against the affected student.**)

Grading:

Tests:	55%
Pop-up quizzes in lecture:	10%
Lab reports:	10%
Lab quizzes and pre-labs turned in:	5%
Semester Project:	20%

Important notes:

1. A semester project that has not been finished will not be given partial credit.
2. The overall grade cannot be better than the grade earned for the semester project.

Have fun!